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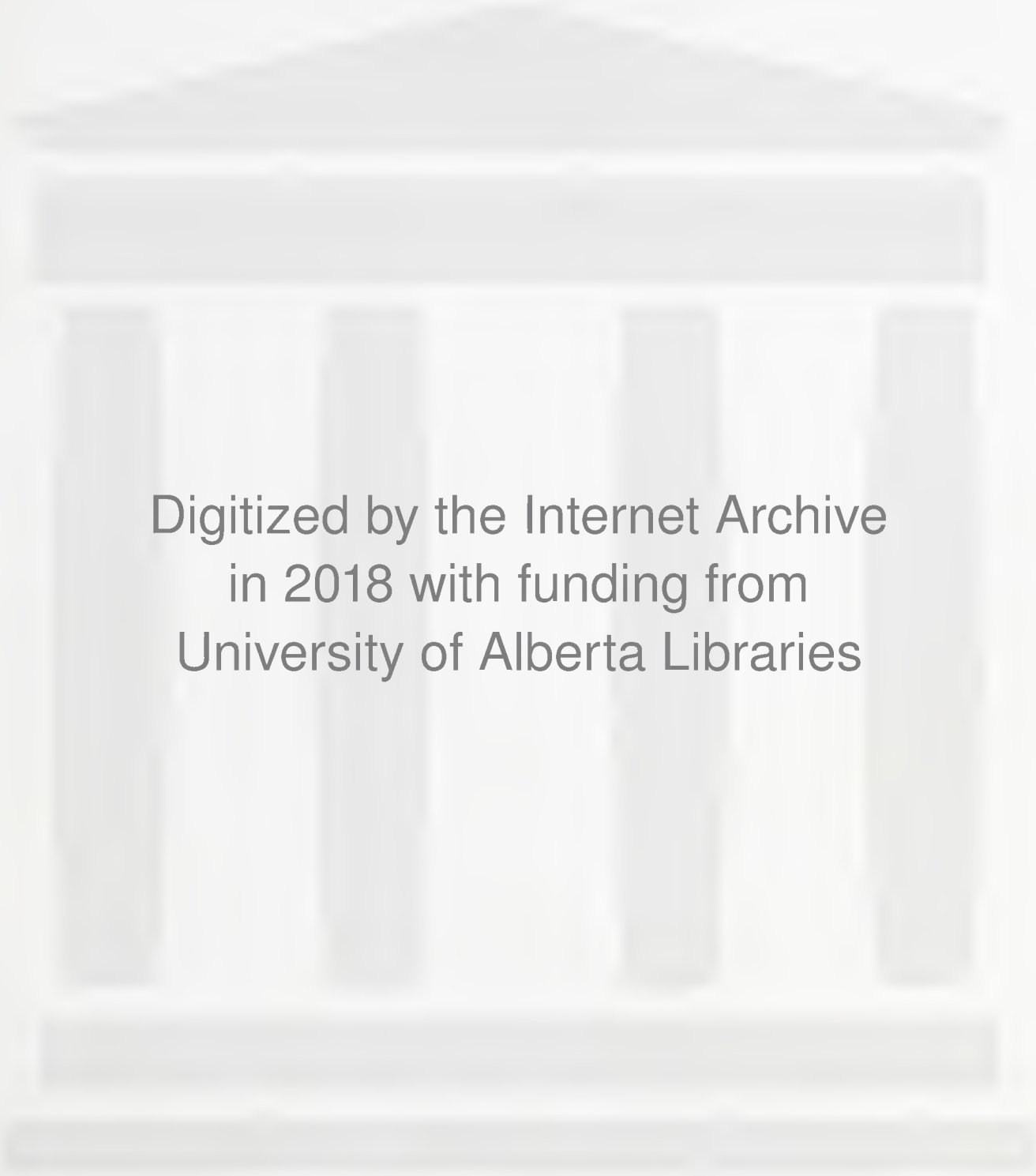
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AN EXPERIMENTAL APPLICATION OF THE CONCEPTS OF  
IMAGE AND PLANS TO THE COUNSELING SETTING

A Thesis

Submitted to  
the Faculty of Graduate Studies  
University of Alberta, Edmonton

In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy

by  
Herbert Daniel Peters

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## ABSTRACT

The study was designed to determine the functionality of the concepts of Image and Plans as postulated by Miller, et al. The Image referred to such cognitive functions as knowing, perceiving, conceptualizing as well as values. The Plans referred to the sequential pattern of behavior. With its evaluations, the Image controlled, guided, and modified the Plans during execution.

The three experimental groups were given treatment consistent with the concepts of Image and Plans. The hypothesis that interference with the Plan, Image, and Image and Plan combined would result in different personality changes as measured by various personality tests, was not supported by the analysis of variance of the twelve variables. Significant differences between groups were found only on the one variable, Self-Acceptance; the Plan and Plan-Image groups differed significantly from the control.

An examination of the differences within groups showed that no changes in means occurred on Dogmatism, Left Opinionation, TBR Motor-Cognitive Rigidity factor, Edwards' Social Desirability Scale, and Ideal Adjustment. Significant within group changes occurred on the following scales:







1. On the TBR Psychomotor-Speed factor and Composite Score all the groups changed significantly toward flexibility. The Plan-Image changed the most and the control the least.

2. On Self-Acceptance, the Plan and Plan-Image groups changed significantly at the .01 level and the Image group at the .05. All changes were toward greater self-acceptance.

3. Both the Plan and the Plan-Image groups changed toward better adjustment on the Self Adjustment Scale.

4. On the Opinionation Scale, the Plan group changed toward less opinionation on both the total score and right opinionation.

5. The Plan-Image group changed toward greater rigidity on the TBR Personality-Perceptual Rigidity factor.

These changes suggest an interesting trend as the Plan group changed significantly on six variables, the Plan-Image on five, the Image on three, and the control on two. However, on two variables the mean differences of all four groups were significant, the Plan-Image group mean differences being most significant, and the control the least.

Since interference with the Image and Plan is possible, the Image-Plan paradigm should now be tested in a clinical setting.







## ACKNOWLEDGEMENT

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## CHAPTER I

### INTRODUCTION

Presumably, the task of modern psychology is to make sense out of what people and animals do, to find some system for understanding their behavior. . . . The ancient subject matter of psychology--the mind and its various manifestations--is distressingly invisible, and a science with invisible content is likely to become an invisible science. We are therefore led to underline the fundamental importance of behavior and, in particular, to try to discover recurrent patterns of stimulation and response. (Miller, et al., 1960, p. 6)

Behavior has been in the focus of attention of all psychologists, whatever their specific point of view. The Self, Ego, Schema, or Reflex was studied not only for itself but also because it might hold the clue to a better understanding of human behavior. The above statement by Miller, Galanter, and Pribram (1960), therefore, is not only a part of their own rationale but a reiteration of the task of all psychologists. However, Miller, et al. were not satisfied with merely clarifying the problem for they were interested in attempting a new explanation which would be comprehensive enough to link behavior directly with the cognitive processes. They rejected the concept of the reflex arc as the fundamental building unit of behavior and formulated a new one. That the dethronement would not be easy was evident when they said, "We are not







likely to overthrow an old master without the help of a new one, so it is to the task of finding a successor that we must turn next." (p. 19)

In their quest for that "new master" they turned to a computer analogy, centering their thinking around Images and Plans. In his review of the book, Hebb (1960) considered the work encouraging, stimulating, and enlightening since "it tell(s) us something worth knowing about human beings." (p. 209) While he considered that Miller, et al. had left certain things at loose ends, he felt that more work should be done along these lines. "It should be a beginning, not an end." (Hebb, 1960, 211)

This study, therefore, was designed as an experimental examination of Miller, Galanter, and Pribram's concepts of Image and Plans. The evidence of their usefulness in describing behavior should be testable by trying to interfere with one or the other to discover if personality changes would occur.

Psychotherapy has always been concerned, not so much with personality per se, but with deviant personality which needed to be changed. By various criteria, people have been diagnosed as being maladjusted and therefore fit subjects for therapy. The maladjustments suffered ranged from the severely disorganized, who were a threat to themselves and society, to those who were inept in interpersonal







relations. In therapy, the discussions usually centered about the self, attitudes, and feelings, anticipating that changes in these areas would result in improved behavior.

Since it seemed possible that counselors might be able to use the Image Plan paradigm in psychotherapy, several of the more recent writings, which seemed to have special relevance to this kind of conceptualization, will be reviewed. The theory of Miller, et al., upon which this study is based, will warrant discussion in a separate chapter.







## CHAPTER II

### PLANS AND THE STRUCTURE OF BEHAVIOR

The chapter title was borrowed from a book by Miller, Galanter, and Pribram (1960) whose chief concern was to discover whether cybernetic ideas had any relevance for psychology. They felt that present day cognitive psychology was incomplete, leaving the organism "more in the role of a spectator than a participant in the drama of living." (p. 2) Man might build an elaborate Image about himself and his world but it seemed to them that a Plan was needed before that Image could be exploited. The cybernetic model for their theorizing was the modern electronic computer which has both an Image (memory) and Plans (programs).

This chapter will be a detailed review of Miller, et al. (1960), following closely their order of developing the theory. The first section will deal with the basic concepts of Image and Plan. Their inter-relation and functions will be developed in the remainder of the chapter.

### IMAGE AND PLAN

The authors were concerned about bridging the gap







between cognition and the behavior itself. Previous cognitive theories had narrowed the gap between the stimulus and the cognitive organization. The authors say that "while the gap from knowledge to action looks smaller than the gap from stimulus to action, a gap nevertheless is still there." (p. 9) They felt that the gap could be closed with their concept of Plans. A person's behavior is guided by what he expects to happen. For as a person anticipates what will occur, "(he) construct(s) a plan to meet it. What (he) expect(s) to happen, foreshadows what (he) expect(s) to do." (p. 5) They further elaborate upon this idea with:

*We call them plans without malice--we recognize that you do not draw out long and elaborate blueprints for every moment of the day. You do not need to. Rough, sketchy, flexible anticipations are usually sufficient.* (p. 5)

This could be summarized in their words that "You imagine<sup>x</sup> what your day is going to be and you make plans to cope with it." (p. 6)

The problem that confronted the authors was how the organism's actions were controlled by its internal representation of the universe. The actions of a free organism appeared to be organized into patterns. Organization of behavior appeared to be just as important as the organization of perceptions. The organization or configuration of behavior seemed to be very temporal

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<sup>x</sup>Italics are in the original.







because "it is the sequence<sup>\*</sup> of motion that flows onward so smoothly as the creature runs, swims, flies, talks, or whatever." (p. 13) There appeared to be a need to provide some means of linking the cognitive representation and the pattern of activity.

A complete description of behavior, at all levels of complexity was necessary before behavior could really be understood because "behavior is organized simultaneously at several levels of complexity. We shall speak of this fact as the hierarchical organization of behavior." (p. 15) The various molecular activities can be understood only in terms of molar organization. However, molar behavior can best be described by dividing it into its molecular units. It is therefore not a case of either/or but of both. This of course, complicated the task of description. This hierarchical organization of behavior which involved both the molar and molecular organization simultaneously was taken to be axiomatic.

### Definitions

The following few basic definitions will be helpful for understanding Millar, Galanter, and Pribram's discussion of Image and Plans.

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<sup>\*</sup>Italics are in the original.







Plan. The word Plan will be capitalized whenever it is intended to mean a hierarchy of instructions which guides behavior. Miller, et al. define the Plan as, "any hierarchical process in the organism that can control the order in which a sequence of operations is to be performed." (p. 16) It will be used to designate any rough sketch of action, including not only the general outline but also the details. It will be considered that the Plan is for the organism what a program is for the computer.

Strategies and Tactics. It has been said above that behavior is organized on different levels, ranging from molar to the molecular. The molar units will be called strategies and the molecular one will be called tactics.

Execution. An organism is executing a Plan when an actual Plan is in control of a particular sequence of behavior. The organism proceeds step by step, going to the next step only after the completion of the preceding one. Plans, such as the one for collecting or transforming of data, may not always result in any overt activity. It is assumed that while there may be a rapid switching from one Plan to another, only one Plan can be executed at any one time. Again considering the computer analogy,







Plans that are not being used are stored by the organism.

Image. "The Image is all the accumulated, organized knowledge that the organism has about itself and its world. . . . It includes everything that the organism has learned--his values as well as his facts--organized by whatever concepts, images, or relations he has been able to master." (pp. 17, 18) The term Image is used to designate a private representation of himself and his world rather than mere imagery.

Once the terms have been defined, the major task is to explore the relationship between the Image and the Plan. This should not be construed to imply that a sharp distinction exists between the two. Miller, et al., list the following points of interaction between them:

1. A Plan can be learned and so would be a part of the Image.
2. The names that Plans have must comprise a part of the Image for human beings, since it must be part of a person's Image of himself that he is able to execute such-and-such Plans.
3. Knowledge must be incorporated into the Plan, since otherwise it could not provide a basis for guiding behavior. Thus, Images can form part of a Plan.
4. Changes in the Images can be effected only by executing Plans for gathering, storing, or transforming information.
5. Changes in the Plans can be effected only by information drawn from the Images.
6. The transformation of descriptions into instructions is, for human beings, a simple verbal trick. (p. 18)







The various facets of Images and Plans and their interaction will be developed in greater detail below.

### THE UNIT OF ANALYSIS

Continuing with the computer analogy, the Image will be considered a "memory" and the Plan a "program." In order for a computer program to function, it is necessary to have a specific connection between the memory and the program. A simple feed-back-loop, Test-negative, which is essentially a check-off tally, provides this connection. The number of required operations are fed into the program before execution begins. Each time this particular phase of the program is executed, a tally (1) is subtracted from N. The Test-negative is executed after each subtraction to test if that particular phase has been repeated often enough so that the program may proceed to the next phase. The authors do not consider the reflex arc as the basic unit of behavior but the feedback loop. This has been called a TOTE (Test, Operate, Test, Exit) unit. The organism is testing the operations or executions of the Plan against some criterion established in the Image. If an incongruency exists, certain operations are executed until the incongruency has been removed. The TOTE is illustrated in Figure 1, page 10.

Instead of considering that energy or information







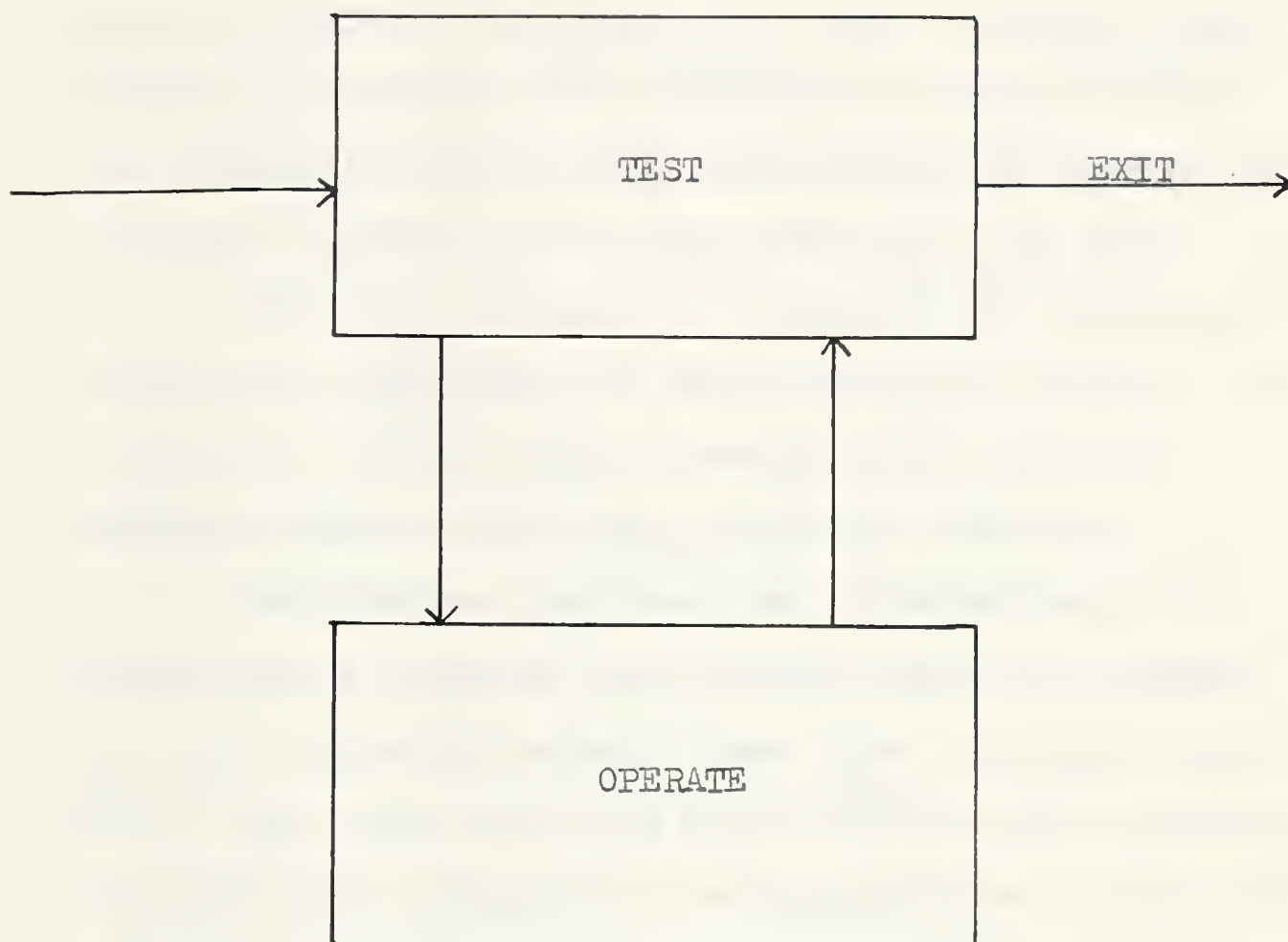


FIGURE 1

THE TOTE UNIT OF BEHAVIOR  
(Miller, et al., 1960, p. 26)

Before execution, each unit of behavior is tested for its appropriateness. If the necessary conditions are not satisfied, an operation is executed and then a retest is made. This is repeated until the requirements of the test are met.







flowed along the arrows, they preferred to consider that control was being transferred. The TOTE therefore controls the succession of behavioral events very much as a person is guided by an index in a book. A person keeps looking up reference after reference in the book until the desired information has been found. The sequence of referral is guided by the page numbers in the index.

This is a very general conception of a feedback without any connotation of reinforcement or values. It is merely a testing device whereby an act cannot be executed before it has been tested for relevance.

The TOTE was considered as a servomechanism not only stopping behavior when certain conditions existed but also initiating behavior when other conditions existed. Thus, these units may not be isolated but actually organized into a hierarchy, having relevance at both the strategy and tactic levels of behavior. The interdependence of strategy, tactic, and TOTE is illustrated in Figure 2, page 12, in the problem of driving a nail into the board. The strategy is driving a nail into the board while the tactics are lifting the hammer and striking the nail. The TOTEs not only determine whether the nail needs another blow or not, but also report on the position of the hammer. One cannot strike the nail while the hammer is down! The complexity of the Figure can be







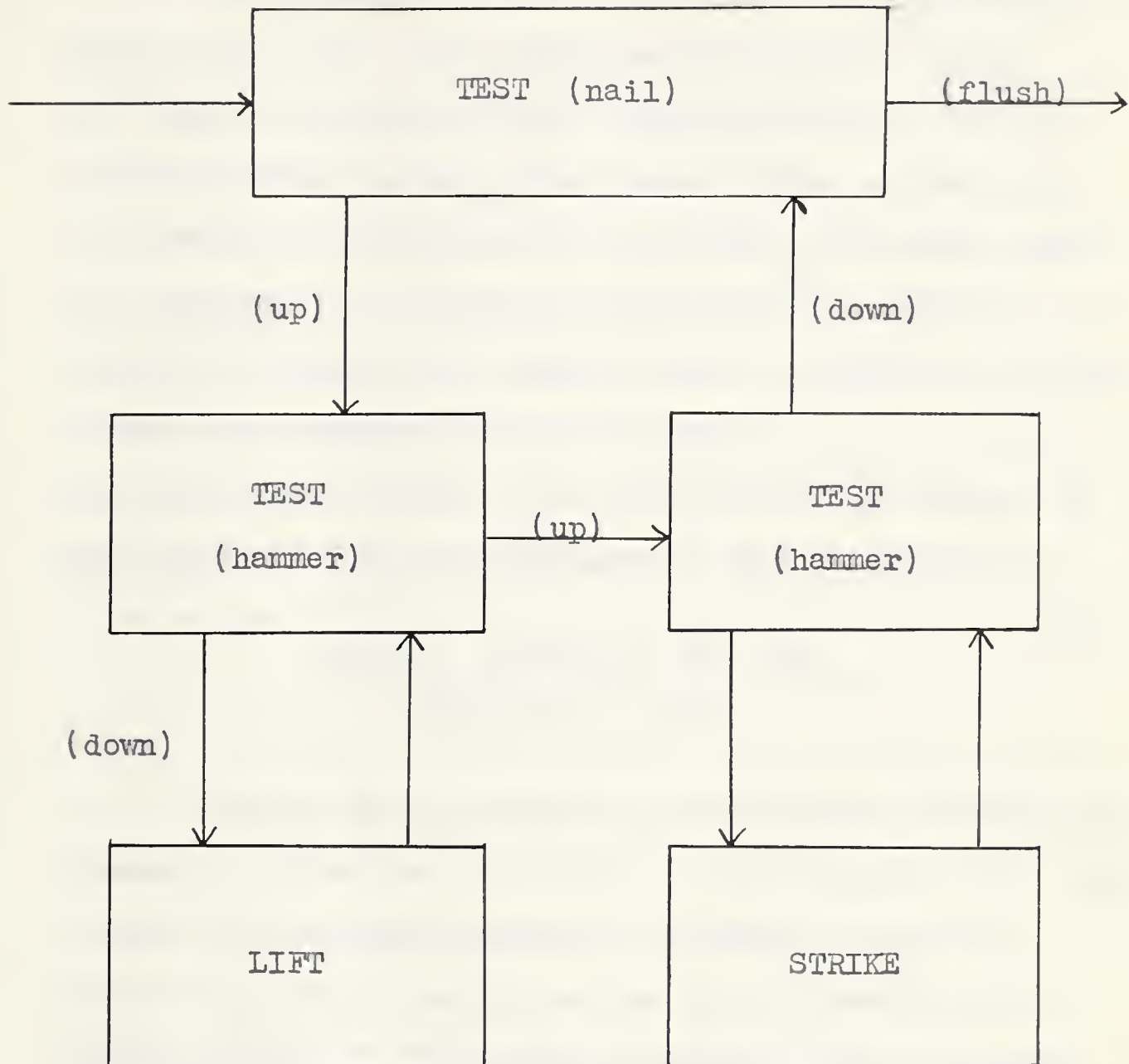


FIGURE 2

THE HIERARCHICAL PLAN FOR HAMMERING NAILS  
(Miller, et al., 1960, p. 36)







increased from the nailing of a board onto the floor to the building of a house.

The expansion of the TOTE concept as suggested above would permit the execution of elaborate Plans. The task in Planning is the construction of a list of tests that must be met. The Image of the desired outcome provides the basis for such tests. When the tests are arranged in a sequence, they in turn provide a general strategy for a possible Plan. As Figure 2 illustrates, any complex Plan will probably consist of many more tests than action. The above discussion shows how the Image and Plan are inseparably linked together.

#### VALUES, INTENTION, AND THE EXECUTION OF PLANS

Miller, et al. point out that motives include two elements, values and intentions. They said that "a value refers to an Image, whereas an intention refers to a Plan." (p. 62) A person may be able to execute many Plans, that is, he has many skills, but until he begins the execution of a Plan which includes a particular skill, can they be called intentions. A Plan of action means an intention to complete a number of acts in a certain manner.

In order for a Plan to be executed, it relies heavily on the Image and its evaluations for guidance.







It is assumed that every TOTE has some evaluative function associated with it. However, this does not mean that every negative evaluation by a TOTE will by itself stop proceedings. The overall intention may be able to bear a certain amount of undesirable activity as long as the end result is satisfying to the Image. It would be reasonable to consider that the hierarchy of TOTES would be associated with a hierarchy of values. The negative tests could then be measured against a prototest which carried greater evaluative weight.

Before a Plan can be initiated (a known Plan) it must be brought from memory and be placed in the focus of attention before it can control behavior. "The parts of a Plan that is being executed have special access to consciousness and special ways of being remembered that are necessary for co-ordinating parts of different Plans and for co-ordinating with the Plans of other people." (p. 65) It is interesting to note that some information is in awareness only during some relevant activity (execution of Plan) but seemingly inaccessible at other times. Once the execution of a Plan is begun, the unfinished parts become intentions which remain such until executed. The working memory must keep track of all intentions that need to be completed. The point of interruption is necessary before the task can be properly







resumed. Sometimes these intentions must be remembered for a considerable length of time. However, the load of remembering can be lightened by recording intentions externally.

An appointment book or recipe becomes a blue print of intentions which can be "forgotten" because the person depends on this external aid. However, intentions can be "forgotten" under other circumstances as well. The authors discussed various possibilities which ranged from the dynamic Image changes to the non-dynamic changes of Plans. Whenever the execution of a Plan begins to make undesirable or threatening changes in the Image, the Plan may be stopped and the remaining intention "no longer remain intentions." The Image is continually being modified as the many Plans are "run off" and therefore the TOTEs are measuring against a modified value structure. The person's Plans may be changed without becoming aware of the change. Things that were important have lost their significance.

The working memory can also go awry because of some physiological defect caused by illness or accident. Another possible reason for "forgetting" an intention may be that the tactics or even strategies which were to prepare the way for another intention were impossible to







execute. "Not all Plans are feasible." (p. 70)

### THE ACQUISITION OF MOTOR SKILLS

The acquisition of any motor skill is usually related to a "communicable program of instructions." (p. 82) A schematic communication, either verbal or demonstrative is transmitted by another person. However, the information about the basic strategy will not guarantee proper execution of the Plan. The teacher may faithfully communicate the strategy but the detailed tactics are elusive. The tactics are usually implicit rather than explicit and communicable. For example, how does a person balance himself while riding a bicycle? A person is usually encouraged with a "You'll get the feel of it eventually!"

Once a strategy has been developed, the person will be able to modify his behavior because he understands what he is doing. He no longer is dependent upon an external or verbal Plan but has internalized the controls. In any event, "the development of skills requires the construction of a hierarchy of behavioral events, each guided by its own Plan." (p. 85) The degree of proficiency will determine the size of the units which need to be consciously controlled.







Man has a unique advantage in learning new Plans because of his ability to communicate verbally. Language enables man to communicate "Plans from expert to novice, and from one generation to the next." (p. 88) The verbal Plans act as a crutch until he is able to operate without it. Once learned, the feedback will guide the movements into a unitary, independent whole. A clear differentiation between skilled and unskilled behavior is given by Miller, et al:

The verbalized strategies of a beginner may achieve the same result as the involuntary, habitual strategies of an expert, so there is a sense in which we recognize that they are the "same" Plan. But the beginner's Plan is carried out in a way that is voluntary, flexible, and communicable, whereas the expert's version of the Plan is involuntary, inflexible, and, usually locked in. One can say that the development of skill frees the verbal planner to work with larger units of the Plan. (p. 89)

Returning to the computer terminology, the person learns his Plans digitally, for instance, responses are of an all-or-nothing variety. Once the Plan is learned, it functions in an analogue or continuous manner with digital events. The smooth, flowing motion of the skilled athlete can only be understood in analogue terms.

While the discussion may be quite mechanistic, this is done for the sake of simplicity. The computer is understood and at the present time is the best simulator of human behavior. An understanding of computer programming can only lead to a greater appreciation of







the complexity of human Plans.

### INTEGRATION OF PLANS

It would be quite helpful if a special language were available for speaking about the Plans that people have and make. Since this is not available at the present time, it will be necessary to use a "long-hand" symbolization.

People try to carry on several Plans at the same time, that is, they co-ordinate several Plans into a single stream of activity. Some Plans seem to be executed in order to create optimum conditions for other Plans. These Plans must of necessity precede the second Plan. However, the ordinal pattern of execution is not always necessary. There may be many different orders as long as the main goal is being achieved. Given a number of sub-Plans, a larger Plan can be created to achieve a given end. Flexibility in choosing between alternate sub-Plans may lead to greater efficiency. However, sometimes several sub-Plans may not be compatible. The effect of incompatible Plans on the person is quite different from conflicting motives. The authors say that:

He is almost necessarily unaware that his Plans conflict, whereas he may be painfully conscious of his incompatible desires. There is almost certain to be a large penumbra







of confusion surrounding the incompatible Plans; the person seems to be deliberately frustrating himself, but cannot understand why. . . . The two Plans may be isolated from one another in such a way that it never occurs to the person to contrast one with the other. (p. 97)

The neurotic may be suffering from two pervasive, conflicting Plans, neither of which can be relinquished. For example, a person may have accepted a life Plan from both the father and the mother. The resulting vacillation may result in inaction where neither Plan can be executed.

Plans can be integrated only by the person who is executing them. The integrative mechanism will probably itself be "a TOTE hierarchy" (p. 98) which is not testing specific responses but hierarchies of responses, namely, Plans themselves. "That is to say, we must have Plans that operate upon Plans that operate upon information to guide motor behavior." (p. 98)

While the individual is faced with the complex task of integrating Plans, the complexity of integrating the Plans of several people is even greater. The public or shared Plans must be based on some public Image. A public Plan exists whenever and wherever people plan to co-operate in any given enterprise. The project may be a non-recurrent, one shot affair, or be relatively enduring. In more complex public plans, the division of







labor may be defined in terms of the social roles of the participants. A social Plan exists because the members cannot execute the desired Plan alone. A planless group (one which has executed its Plan) will disappear.

A shared Plan is extremely interesting because it is easily accessible. Before a shared Plan can be executed, it must be communicable and therefore available for observation and examination. An individual may not wish to reveal his private Plan or he may no longer be aware of its details. In social Plans, the prescribed Plan must be available in detail before satisfactory performance can be expected. The shared Plans are often extremely important to the group, survival itself may depend upon it. Our social institutions are in reality only formalized group Plans.

A general problem of planning, both individually and collectively, is the integration and co-ordination of Plans. The feasibility of a Plan very often depends upon the synchronization of the time and spatial factors. Since Plans may compete with each other for the time available, the TOTE mechanism mentioned above must determine the priorities and rules by which each Plan is executed or whether some should be postponed or dropped. Without the integrating aspect of human planning, behavior would be disjointed and contradictory.







## RELINQUISHING THE PLAN

According to Miller, et al. (1960), the only example of complete surrender of self planning and the acceptance of another's Plans is in hypnosis. A common explanation of hypnosis is that the subject surrenders his will to the hypnotist. However, the will is not a well defined psychological term. The authors suggest that the subject had stopped planning for himself and accepted the Plans of the hypnotist. They make the basic assumption that a person must be executing some Plan at all times. Since he has stopped planning for himself, he accepts the hypnotist's Plans and executes them instead. However, he is still dependent upon his own tactics which he has learned to fill in the details. These routine activities are referred to as housekeeping Plans which the individual forms and learns once and which are used by the various appropriate Plans.

It is interesting to note that there is a similarity between falling asleep and being hypnotized. As the person falls asleep, he stops planning for himself. In hypnotism the person is discouraged from thinking and talking. In short he is told to "relax and stop talking to himself." (p. 106) The authors report an alternate method which is more difficult to use but







quite in keeping with their theory.

An alternative procedure for inducing hypnosis is for the operator to give the subject difficult and conflicting instructions at a fairly rapid rate, so that the subject's own planner becomes confused. Instead of coasting to a halt, it becomes overloaded and quits. In this crisis the Plans offered by the hypnotist may be accepted as well as a welcome relief from confusion. (p. 106)

Before hypnosis can be successful, the hypnotist must supply feasible Plans which can be executed. Speech plays a vital role in hypnosis, in this case, the speech of the hypnotist. It has been observed that the hypnotized person is very reluctant to speak and if induced to speak, the hypnotic trance will tend to lighten. The authors hereby make a case for the close relationship between speech and planning.

In the waking state, the individual stores away his experiences as they occur. During the hypnotic trance, this Plan also appears to be suspended and the subject cannot recall his experiences. Since the speech function is also depressed during this time, it may be that all memory and recall is associated with verbal labels and for this reason he is unable to recall the events during hypnosis.

When the subject stops planning for himself, the usual stop-orders are also suspended. The usual limits, such as pain, which stop or initiate another Plan are no







longer operative. He is entirely committed to the execution of the Plan offered by the hypnotist.

The authors offer the following list of hypnotic phenomena which seem to be quite intelligible in the conceptualization of the Plan:

1. When a hypnotist stops talking to his subject, we should expect to see the subject lapse into quiet immobility, or fall asleep, or become dehypnotized.
2. Posthypnotic suggestions are Plans--made well in advance for the subject by the hypnotist.
3. Any drugs that would interfere with speech should make a person easier to hypnotize, which seems to be the case. (p. 111)

The authors justify this excursion into hypnosis with the following statement:

The major implication of this conception of hypnosis is not so much the explanation provided for hypnotic phenomena as it is the intimate connections that are implied among volition, inner speech, and normal and waking consciousness. It is not too improbable, we feel, that consciousness is in some essential way the capacity to make one's own Plans and that volition is the capacity to execute them. If so, then language, by extending man's ability to Plan, must tremendously expand his consciousness of himself and his world over that available to, for instance, a chimpanzee. (p. 111)

The state of Planlessness is extremely painful to the person. The complaint of people who seek psychiatric help can usually be classified either as an inability to choose between two incompatible Plans or that they are guided by irrelevant or infeasible Plans.

This state of Planlessness can be caused by a







number of factors. If brain damage cannot account for it, a psychological explanation must be discovered. The following situations might explain why a person finds himself without relevant Plans:

1. The situation is too complex or ambiguous for him to tolerate or overcome. He cannot create a Plan that is capable of overcoming the difficulty.

2. He may be living on borrowed Plans and the source has disappeared.

3. His Plans had a concrete terminal point. The Plans have been executed, there is nothing more to do. Like Alexander, there are no more worlds to conquer.

4. He is thrust into a new environment and his Plans are not relevant.

When the necessity arises that a major change in Plans must be made, it is likely that a major change in the Image will also occur. The period of Planlessness may be accompanied by "emotion." The amount of emotion will be in proportion to the extent that the Plans are being changed.

The person may react in various ways when he is faced with a need to revamp his Plans. The paranoid reaction would be to utilize the old Plan despite its irrelevance. Instead of changing the Plan, the contradictory parts of the Image are changed so that the Plan







may still be executed. Unless the Plans are obviously socially disruptive, they may continue to be undetected for years. The schizophrenic response would be to make as few changes in the Plans as possible. These changes would be mostly in the tactics, leaving as much of the strategy as possible. When the strategies are abandoned and only the tactics retained, a compulsive response would be expected. In the more extreme form, abandonment of strategies would develop into the following syndrome described by the authors:

The survival of autonomous islands of involuntary Plans may well form a part of the clinical picture of hysteria and, when very marked, of catatonia. Both hysteria and catatonia are characterized by habitual, ritualistic patterns of behavior that substitute for the development of new, useful Plans. (p. 116)

The realization that enduring Plans must be abandoned is accompanied by emotional excitation. Without a definite focus, it can be called anxiety.

#### NONDYNAMIC ASPECTS OF PERSONALITY

While the first experimenters were committed to the analysis of the Image, the behaviorists focused their attention on the movements of the organism. During the ensuing controversy both groups lost sight of the fact that the Image and Plan were not competitors but were functionally linked together. Both groups were searching







for basic laws which would help describe personality. Miller, et al. say that the Image is relatively stable and behavior is controllable in the laboratory. They say that, "Whereas the Image is, values excepted, discouragingly stable among members of similar cultures, the Plan is so variable that it almost defies description. A clinician wants people to be different, but not that different." (p. 118) They contend that the study of these Plans should be a rich source of clinical insight. In order to appreciate the variability of Plans, they might be examined with respect to some of the more obvious differences.

Source. Because Plans are communicated, it is possible to accept ready-made Plans from others. A person can be either a self-directed person or an other-directed person.

Span. The time span of Plans varies greatly. Some people's Plans are typically of the day-to-day variety while others create Plans which may span a lifetime.

Detail. The amount of detail planned can differentiate between the compulsive and flexible person. This is not the only criterion of compulsivity, as some Plans require greater detail.

Flexibility. Flexible Plans permit the parts to







be rearranged without affecting its overall feasibility. The parts of a flexible Plan can be rearranged as optimal conditions arise for their execution. Inflexible Plans are typical of a rigid person.

Speed. Some people can plan faster than others. A planning skill separate from an intelligence factor seems to be present.

Co-ordination. The ability to co-ordinate Plans seems to be only a correlate rather than an effect of intelligence.

Retrieval. The type of control of Plans varies from complete internal control to control by calendar pad. Some people are disturbed if they lose track of their Plans whereas others seem to be unperturbed as they flit from Plan to Plan.

Openness. The degree to which people share their Plans varies from complete secretiveness to a free discussion of only partly formulated Plans which they may or may not execute.

Stop-orders. The stop-orders are related to the persistence with which people pursue their Plans. The stop-orders come very close to the evaluative or dynamic properties of the Image. The perseverance mentioned here is not necessarily related with compulsiveness.







While the above list was not intended to be an exhaustive list of all the possible dimensions for study, the authors wished to label them as personality traits. This type of trait theory would be free from any evaluative overtones which has characterized trait theories in the past. Once the structure of Plans would be freed from values, "it could stand as part of the description of a personality on an equal footing with the current descriptions of need structure." (p. 122)

#### PLANS FOR REMEMBERING

Remembering is only possible if the individual forms a Plan for recalling the data. There must be an "intent to learn." (p. 129) This Plan to recall organizes the new information in a meaningful way which makes recall possible. Even nonsense material is organized into "a kind of simple hierarchy or Plan." (p. 131)

An ordinary list of items to be learned requires  $N - 1$  linear associations. If the learner groups the items, he only needs  $n - 1$  associations within each group plus an association between groups. It must be remembered that each person does his own organizing which makes a statistical evaluation practically impossible.

The problem of memorization is not so much the formation of associations nor of storage but one of







insuring a way in getting access to the associations when needed. The retrieving Plans create the bottleneck in remembering.

### PLANS FOR SPEAKING

Since it would be humanly impossible to learn to speak by memorizing strings of words which make complete sentences, it is reasonable to say that sentences must be created as wholes. An idea must be expressed in verbal form. The various rules of grammar become TOTEs for acceptable speech. Speaking is a skilled act which requires many years of practice. In order to learn to speak correctly, a Plan is needed. The concern is not the molecular muscle movements but rather the molar grammatical ones. Each sentence requires a Plan for speaking which organizes the words into a proper sequence. These sequences cannot be all learned as mentioned above, but must be manufactured on the spot. It would be humanly impossible to learn the many sequences that are possible in any given language. Sentences are not chains of words but hierarchies of words.

The grammar Plan can be said to be a hierarchical structure containing all the grammatical rules of formation and transformation. This Plan must not only gather the building blocks of subject and predicate but also the







mortar consisting of their modifiers. Before the sentence can be spoken it must pass all the tests of grammar and meaning itself. Miller, et al. describe this final test in the following way:

One way to conceive of it is to think that an Image of the result which the sentence should produce, or of the information it should convey, supplies criteria that must be met before the tests are passed. (pp. 156, 157)

It is safe to say that the efficiency of grammatical Plans varies greatly from person to person.

Speaking, then, requires not only a vocabulary and motor speech organs, but a Plan whereby the words are organized according to certain well defined rules. This explains why expression in a foreign language is so difficult. The grammatical tests in one language are entirely inappropriate for another.

#### PLANS FOR SEARCHING AND SOLVING

The information processing that goes on during thinking and problem solving can be classified into two ways--either in terms of prediction or in searching.

According to the prediction paradigm, the Image is lacking in sufficient knowledge so it is necessary to gather more information. Imaginal thinking has been described as constructing an image or model of the environment, running the model faster than the environment,







and predicting that the environment will behave in a similar manner. Various Plans can be executed imaginably at a faster rate than would be true in reality and so the "best" procedure can be taken.

The search Plan seeks to determine which of the various alternatives is the right one. A search for an object in the physical environment is usually quite simple compared to a search Plan in problem solving. As the number of variables increases, the possible solutions mushroom in number, even to approaching infinity. Just for example, four items can be arranged in twenty-four different ways; five in 120; six in 720; and ten in 3,628,800. The pace quickens as the variables increase.

A search Plan which would consider all the possibilities could never be completed. The solution to this dilemma is that heuristic Plans are needed which exercise discernment and accept the most reasonable solution in a given time.

Before a heuristic Plan can be executed, the problem must be well defined so that when the solution is found, it will be recognized. If previous Plans have failed, it may be necessary to "construct a better Image of the situation" (p. 172) so that the solution may be found. Search Plans usually have a halt-order if the problem seems to be unsolvable. Individual differences







as to how these stop orders will be used has been mentioned above.

The quest for a solution may sometimes be furthered by building up the Image with more information or it may be done by the formation of better search Plans. The authors feel that either approach is congenial to the TOTE schema. The task and method of formulating heuristic Plans will be discussed next.

### THE FORMATION OF PLANS

It seems quite plausible that any new Plan is usually based upon an old Plan. Plans are continually being modified to meet new situations in the environment. Shared Plans are usually communicated verbally. However, a new twist in planning arises when old Plans cannot be revised to meet a new situation. There are four major steps in problem solving:

1. The problem must be understood.
2. An adequate Plan must be devised.
3. The Plan must be executed.
4. A review of the used Plan. (pp. 179, 180)

While the last step is extremely important for the solution of similar problems in the future, the second phase must be considered to be the creative one. The first step in problem solving is to find a related







problem and its solution. If this is not available, a new Plan must be heuristically formulated by the meta-Plan.

Some may claim that the model is too complicated, that only the intelligent could possibly solve problems in this manner, and thirdly, that there is no way of testing such a theory.

The answer to the first criticism is simply that human Plans and thought processes are complicated. The second criticism has lost considerable force since the modern electronic computer can simulate many of the processes mentioned above. The newer machines are not only capable of following a program and finding a solution, but on the basis of a master program are capable of writing their own programs. The computer written programs are usually optimum time programs whereas man-made programs rarely are. Before a machine can write a program it needs a few instructions, which in effect outline the problem. A person, likewise, can from a set of verbal instructions create his own Plan for behaving in a particular situation.

Programs have been written for computers which will permit the machine to play chess. Considering the fact that it must watch thirty-two men (its own sixteen and the opponent's sixteen) with their almost infinite







number of possible moves, the computer must choose, within a given time, its best move. The move must be chosen on the basis of the six main principles of the game. After a move is selected, it must test the move to be assured that its position has not been weakened with respect to the same principles. The computer had to process information and make a decision on the basis of a heuristic Plan.

While it is not possible to say that people's Plans are the same as the computer's programs, the similarity between the steps is striking. It has been suggested, that as subjects solved problems in the laboratory, that they should verbalize the various processes or thoughts as they worked. Experimentation in this vein would overcome the final criticism leveled against the theory of heuristic Plans.

#### RECAPITULATION AND HYPOTHESIS

According to the theory, the personality is composed of a dynamic, evaluative Image and non-dynamic Plans. The Image controls the execution of Plans by its numerous TOTE hierarchies which test the appropriateness of each phase of operation. The information and values of the Image serve as standards against which the Plans are measured. The information and values are incorporated







into the Image by the execution of information processing and storing Plans. The storage and recall of information is facilitated by the use of verbal labels. The Plans are a hierarchical list of instructions which must be executed, very similar to the verbal directions given during the acquisition of a new skill. However, the relative importance of Image and Plans should not be judged by the disproportionate space given to the discussion of the Plans as Miller, et al. were especially interested in the non-dynamic aspects of behavior.

The authors report that the usual complaint of people seeking therapy is the inability to choose between incompatible Plans or that they are guided by irrelevant Plans. This state of Planlessness or inadequate Plans is accompanied by emotion. The amount of emotion "appears to be directly related to the extent to which Plans are pruned." (p. 114)

They further suggest that hypnosis may be induced by confusing the planner and therefore the subject is willing to accept the Plans of the hypnotist. However, the failure of the Plans may also be due to defects in the Image. The four Planless situations mentioned previously could also have their faulty Image counterparts since there is a continual interaction between the two. It may be that a Plan is infeasible not only because of







Plan inadequacy but because of informational paucity in the Image. Likewise, if the Planner can be confused during hypnosis, may not also the testing phase in the Image be likewise confused? This reasoning can be further pursued by asking whether the Plans are inadequate because of a confused planner or because of a disruption of the testing aspects of the Image? At present, the answers are not apparent. Therefore, in order to determine the efficacy of these concepts, attempts will be made to interfere with the Image and Plan separately and together.

Since according to the above discussion, prediction of results is not possible nor which measures will be affected by a specific treatment, the following exploratory hypothesis will be tested: Interference with the Plan, Image, and Plan and Image combined will result in different personality changes as measured by various personality tests.







## CHAPTER III

### RELATED LITERATURE

Psychotherapy is concerned with helping individuals cope more effectively with their environment. It has usually been implied that if an individual is maladjusted, intrapersonal changes are necessary. The object of change varies from feelings, attitudes, and information to behavior in general.

Numerous definitions of psychotherapy, with varying implications, have been offered. A number of these are listed below:

(Psychotherapy endeavors) to alter the behavior and change the attitudes of a maladjusted person toward a more constructive outcome. (Rogers, 1942, pp. 19, 20)

Psychotherapy, then, is viewed from the theoretical standpoint best described as an interference with on-going behavior and attitudinal characteristics, rather than as a method that brings about change through extraction, uncovering, relieving (and re-living) repressed materials. (Phillips, 1956, p. 175)

The main emphasis of the therapist who employs rational technique is on analyzing the client's current problems--especially his negative feelings . . . concretely showing him that these feelings arise . . . from his present irrational attitudes. (Ellis, 1957, p. 344)

We may say, simply, that the goal of psychotherapy is to alleviate complaints--complaints of a person about himself and others and complaints of others about him. (Kelly, 1955, p. 831)

These definitions of psychotherapy are related







to an underlying theory of personality and therapeutic technique. Each of these will be discussed briefly with their special techniques of changing personality.

#### CARL R. ROGERS

The theoretical framework for Rogers' Client-Centered therapy is built around the self in an ever-changing phenomenal field. Rogers (1959) explicitly stated that the theory was progressively revised from his previous formulations (Rogers, 1942, 1951) as new insights were gained from research and clinical experience. The theories of personality and psychotherapy have been developed concurrently.

The infant perceives his experiences as reality and his behavior satisfies his experienced needs for actualization. Behavior which enhances the individual is valued positively and tends to be replicated.

The self is not identical to the organism but is a self-awareness engendered as the individual interacts with the phenomenal field. Rogers (1959) described the process as "a part of the actualizing tendency (where) a portion of the individual's experience becomes differentiated and symbolized in an awareness of being, awareness of functioning. Such awareness may be







described as self-experience." (p. 223) As the individual continues to interact with the environment of significant others, this awareness becomes elaborated into a concept self. The self is thus experienced as an "object in his experiential field." (Rogers, 1959, p. 223)

As the awareness of the self emerges, the need for positive regard also develops. The positive regard is "reciprocal, in that when an individual discriminates himself as satisfying another's need for positive regard, he necessarily experiences satisfaction of his own need for positive regard." (Rogers, 1959, p. 223) However, this interdependence can become overwhelming in that the individual's own valuing processes become subservient to a significant social other and experiences of self are sought or avoided in terms of the conditions of worth (introjected values. Rogers, 1951). Instead of experiencing unconditional self regard, he has acquired a condition of worth which may be at variance with his organismic evaluations.

The individual now evaluates all experiences in terms of these conditions of worth. Only those experiences which are in accord with these values will be accurately symbolized in awareness. Those experiences







which are contrary to the conditions of worth will either be distorted or denied awareness. However, the denial of awareness of organismic experiences does not preclude behavior which is actualizing for the organism. It does not mean that all experiences will not be adequately symbolized and therefore the self will be incongruent with the total experience. The incongruence between the self and experience is maladjustment and results in vulnerability to anxiety. "The more distorted perceptions there are, the more rigidly the self-structure is organized to maintain itself." (Rogers, 1951, p. 515)

Anxiety exists whenever the incongruencies between the self and experience are subceived. The extent to which the self-structure is threatened will determine the degree of anxiety. If the defenses cannot keep the rejected experiences from accurate symbolization, the self-structure is broken down and a state of disorganization exists. The disorganized individual behaves in an erratic manner, as he sometimes behaves in a manner consistent with actual experience and at other times consistent with the self.

However, congruence between the self and experience can be re-established if the process of defense







is reversed, permitting the usually threatening experiences to be accurately symbolized in awareness and assimilated into a new self-structure. This process can be facilitated in psychotherapy. Rogers is extremely optimistic with respect to the ability of the client to restructure his self in relationship to the environment. Before a therapist can be successful, however, he must have the "attitudinal orientation . . . that the individual has a sufficient capacity to deal constructively with all those aspects of his life which can potentially come into conscious awareness. (Rogers, 1951, pp. 23, 24)

It is essential that the therapist establish an atmosphere where the client can feel free to bring tension-producing events to awareness. The client must experience the unconditional positive regard of the therapist before the denied or distorted experiences can be accurately symbolized and organized into the self-structure. The counselor's prime purpose is not so much to clarify but to accept the client. Rogers (1951) states that "the best vantage point for understanding behavior is from the internal frame of reference of the individual himself." (p. 494) This can best be achieved if during the therapeutic session, the







therapist is "freely and deeply himself." (Rogers, 1957, p. 97) The counselor must come without any pre-conceived ideas about his client and his needs. "Under certain conditions involving primarily complete absence of any threat to the self-structure, experiences which are inconsistent with it may be perceived, and examined, and the structure of self revised to assimilate and include such experiences." (Rogers, 1951, p. 517) As the client brings these experiences to awareness, they can be symbolized and organized into a meaningful understanding of his world. As more experiences are being accurately symbolized in awareness, there are fewer distortions and therefore fewer experiences which are threatening. When unconditional positive self-regard increases, the individual tends to be guided by his own values rather than the conditions of worth. He also becomes more confident of his own ability to deal with situations as they arise.

After successful therapy, "the individual is formulating his evaluation of experience on the basis of all the relevant data. He thus has a flexible and adaptive system of values, but one that is soundly based." (Rogers, 1951, p. 532)







## E. LAKIN PHILLIPS

The interference theory of psychotherapy is concerned with the acting individual as he attempts to meet life situations. Phillips (1956) considers the unconscious, repressions, and defenses unnecessary and focuses on the present state of the individual. He defends this position by stating that "people (need not be) viewed so negatively and so pessimistically. Life shows its assertiveness on every hand, in terms of choices, preferences, and values. The therapist has but to capitalize on these natural 'forces.' . . ." (Phillips, 1956, p. 259)

The individual is always acting on the basis of certain assertions or hypotheses about himself. These assertions or hypotheses are thought of in terms of probabilities. The individual anticipates that the environment will respond in a certain way to his behavior. He has envisioned himself to be a certain kind of person and therefore is expecting appropriate responses from the environment. He is behaving as if these assertions were actually true. As long as these expectations are minimally met, the person feels adequate and comfortable and without tension. However, if his expectations are not met or as Phillips (1956)







says, they are disconfirmed, the individual faces conflict and tension. The feedback from the environment has been negative so that he has not realized the satisfaction of his assertions.

A redundancy of goal-defeating behavior ensues unless the individual adjusts his assertions or expectancies. Phillips is confident that the vicious circular behavior can be broken without resorting to any depth therapy. In fact, the problem need not be considered in a historical sense at all. Phillips (1956) says that "Why" questions are the wrong ones to ask. "The proper questions, it is contended, have to do with 'How' and 'What', meaning 'How does the patient act to produce his troubles?' and 'What situations and attitudes give rise to the behavior and symptoms in question?'" (pp. 36, 37)

According to Phillips, changes in the patient's behavior can be effected by giving the patient the proper information, "interpreting, analyzing, and reasoning out the behavior of the patient." (p. 265) "The clinician teaches the patient to bet less or to bet on different probabilities." (p. xvi) The paradigm of Assertion, Disconfirmation, Tension, and Redundancy was followed very closely with each patient. The patients' assertions were made explicit for him. The







refutation of the patient's expectancies resulted in tension. The redundant behavior was shown to be due to his unawareness or unwillingness to be made aware of the underlying assertion. Despite his directness, Phillips stresses the need of a non-authoritarian, accepting attitude toward the patient.

In general, Phillips is concerned with the informational aspects of behavior and the prime purpose of therapy is to make the patient aware of his assertions and expectations. However, there was also a concern with behavior as the discussion of alternatives clearly indicated. Since behavior was seen only as an outcome of an assertion, changes in the latter would result in behavioral changes.

#### ALBERT ELLIS

Since 1955, Ellis has changed from the orthodox Freudian psychoanalysis to a rational analysis approach in psychotherapy. (Ellis, 1956) In rational therapy, the "main emphasis of the therapist . . . is on analyzing the client's current problem." (Ellis, 1957, p. 344) Emotion was considered to be a biased or prejudiced kind of thinking which was misdirecting behavior. Emotions could therefore be changed by







changing thinking habits. Maladjustment was largely an intellectual or at least an informational problem.

In rational therapy, an attack is made on the individual's value structure "because it (is necessary) to reveal and assail the basic ideas or philosophies or values which may underlie irrational behavior or neurosis." (Ellis, 1957, p. 344)

In direct contrast to other therapeutic techniques, Ellis (1957) focused his attention of the client's current problem. The problem was not the precipitating events leading up to the problem but "his present irrational attitudes or illogical fears about these events and situations." (p. 344) The client is not told that his problems stem from certain childhood experiences but rather that his present irrational attitudes toward his present problem was the hindrance to better adjustment.

Following Ellis' (1957) discussion, his rational analysis can be outlined in five steps.

1. While the etiology of the difficulty was discussed, the main emphasis was on helping the client understand his basic philosophy regarding his problem.

2. The above mentioned irrational beliefs were attacked. The unreasonableness of these attitudes were continually pointed out.







3. Rather than seek the disclosure of unconscious drives, the therapist revealed the unconscious and irrational attitudes.

4. Therapy is a re-education program where the client is taught how to think straight about his difficulty.

5. The re-education process is supported by being "encouraged, urged, or commanded into emotionally re-educating activity." (p. 345)

The technique of rational analysis can be summarized best by Ellis (1957):

When, by a fullfledged attack on the irrationality of their beliefs about the horror of disapproval, failure, and wrongdoing, and by a concomitant urging them to make decisions and perform acts which they think are difficult or impossible, they are persuaded to surrender their basic irrational ideas for more rational replacements, they thereby become less neurotic. (p.349)

#### GEORGE A. KELLY

Kelly's (1955) theory of Construct Alternativism is based on his basic postulate that "a person's processes are psychologically channelized by the way in which he anticipates events." (p. 46) Each person has formulated a finite number of dichotomized constructs which, for him, make sense out of the environment. The constructs are bipolar even though only one may be apparent, the other is implied. This structural







network or structure is developed so that environmental events can be anticipated and responded to in a satisfactory manner. Behavior is therefore predictive.

The person is saying, "on the basis of my anticipations, this act will produce these results."

The constructs can be best understood in terms of three main characteristics, namely, comprehensiveness, hierarchical placement, and openness. Some constructs are limited in scope and therefore their usefulness in anticipating events is circumscribed. These will tend to have fewer contacts with other constructs. The placement on the hierarchical scale will determine whether other constructs or which constructs will be subsumed. Seemingly contradictory constructs can be harmonized or understood in the context of the regnant constructs. They may be related to the opposite poles of the regnant one. The more elaborate organization of the constructs into a single network, the more consistent the behavior.

The ease with which new experiences and ideas can be integrated into the psychological process is determined by the permeability of the constructs. Closedness or impermeability will limit the extent to which the constructs can be used to anticipate







the future. Impermeability and stability are not synonymous as new elements are permitted into the range of convenience of the stable constructs. Stability is an indication of an enduring relevance. Constructs are modified by the continual process of construing various events. As each successive anticipation is made, even before validation or invalidation, the relationships within and between constructs are rearranged.

Kelly (1955) defined a disorder as "any personal construction which is used repeatedly in spite of consistent invalidation." (p. 831) This definition of disorder is in terms of the client's present approach to the future. An invalidated anticipation will not necessarily lead to a change in the construct but the continual failure to do so will cause tension. Since the construction system is organized, the person may be unable to determine the extent of the structural weakness and therefore will need practice in constructing his world differently. In therapy it is necessary to help the client change his anticipation, which eventually will mean changing constructs.

Kelly's working definition of therapy that it is "a psychological process which changes one's outlook on some aspect of life" (p. 186) literally demands that







the client formulate new constructs. Superficial movements may be obtained by experimenting with one construct at a time. As the client sees possible extensions he will broaden his construct. This may also lead to a reorganization of the hierarchical structure. "Thus his system becomes clearly delineated whereas once it was sketchy, his superordinate constructs tightened, and he becomes a person of greater integrity. . . ." (pp. 938, 939) However, real progress will only occur when new constructs are construed which can be incorporated into his "core system." (p. 940)

New constructs will not be formed without some form of experimentation. "The client who is to form new constructs, is encouraged to 'try out' new behaviors or to explore within a controlled situation, perhaps verbally only, the outcomes of asymptotic behavior." (p. 163) Kelly also suggested that the client should not consider decisions during the period to be final and unreversable. If the outcomes are not satisfactory, other attempts may be made.

The above therapy clearly indicates Kelly's concern with the present and the future. He does not disregard the past but minimizes its importance for changing behavior. The past is placed in perspective when he says that "a person is not the victim of his







biography but that he may be enslaved by his interpretation of it." (p. 208)

#### MILTON ROKEACH

Rokeach (1960) was not primarily concerned with therapy but his work is of considerable relevance because of his study of the structure of the belief system. The structure of the belief system was described in term of three major dimensions: a belief-disbelief dimension, a central-peripheral dimension, and a time-perspective dimension.

##### Belief-Disbelief Dimension

What a person believes or disbelieves can only be inferred from what he does. Rokeach therefore defined a belief system as the "organization of verbal and nonverbal, implicit and explicit beliefs, sets, or expectancies." (p. 32) This system is asymmetrical, that is, bipolar, having both a belief and disbelief system. One cannot be understood without the other. He differentiated between the content and the structure of the beliefs.

The disbelief system was not unitary as the belief system but was composed of a series of sub-







systems and "contain(ed) all the disbeliefs, sets, expectancies, conscious and unconscious, that, to one degree or another, a person at any given time rejected as false." (p. 33)

The beliefs contain all the knowledge available to the person, organized either in terms of agreement or disagreement. This system was meant "to represent each man's total framework for understanding his universe as best he can." (p. 35)

#### Central-Peripheral Dimension

The three levels of organization of personality are the central, intermediate, and peripheral. The central area represents the person's primitive beliefs, that is, those which he holds of his universe and those which are unchallenged. These beliefs are either idio-graphic or universal; either having no reference point other than the individual or finding complete agreement in his culture.

The intermediate region represents the beliefs a person has in and about the nature of authority and the people who line up with or against his "authority." No one disbelieves in authority, rather it is the nature of that belief that plays a role in the formulation of the structure.







The peripheral area is the organization of the beliefs and disbeliefs as his "authority" permits him. The peripheral area is in essence, each individual's personal Weltanschauung.

#### Time-Perspective Dimension

The time perspective "refers to the person's belief about the past, present, and future and the manner in which they are related to each other." (p. 51) The emphasis of any particular time will result in a narrow restricted time orientation. A realistic anticipation of the future can only be based upon an awareness of the present and the past.

The beliefs of a person with an open system will tend to be interrelated and yet highly differentiated belief and disbelief systems. The time orientation will be relatively broad. There will be an enjoyment of the present and an appreciation for the past.

By contrast, the person with a closed system will tend to have isolated beliefs, undifferentiated disbeliefs, and a narrow future time orientation. The latter will also be more dependent upon authoritative pronouncements for structuring their belief-disbelief system.







## SUMMARY

All of the writers discussed above were interested in human behavior. However, their focus of attention was mostly in terms of the individual's conceptual framework. Rogers writes in terms of the self; Phillips, expectations or assertions; Ellis, beliefs and thinking; Kelly, personal constructs; and Rokeach about the open and closed mind. In the terminology of Miller, et al., this was a concern with the individual's Image. However, when reviewing their practice in therapy, the distinction between Image and Plans became less definite. Ellis not only interfered with the value structure, but also assigned "homework" which would help establish new values. Phillips suggested a modification of assertions and behavior in an attempt to get the patient's assertions confirmed. Kelly's "notion that there are many workable alternative ways for one to construe his world" (p. 560) was suggestive of the concept of alternative Plans. (Miller, et al.) Nevertheless, the idea that a person anticipates the future by construing the replication of events is still more evaluative than the notion of Plans will permit.

As the above theories were studied, it was noted







that none of the writers established as intimate a link between cognition and behavior as Miller, et al. (1960). The latter were speaking not only in molar but also molecular terms of behavior. Not only the nature of schematic organization was described but also the process. Behavior was explicable since it was controlled by definite values. The notion of Image and Plans therefore, seemed to be a unifying conceptualization within which the others were better understood.







## CHAPTER IV

### EXPERIMENTAL DESIGN

#### SUBJECTS

The sixty-eight<sup>1</sup> subjects for the experiment were drawn from two introductory classes in Educational Psychology and randomly assigned to three experimental and one control groups. The sample consisted of twenty male and forty-six female subjects ranging in age from 17 to 51. The mean age was 21.3 with a standard deviation of 7.1. The students were in the one-year teacher training program (Junior E) which required credit in at least five matriculation subjects with an average of 60 per cent on the five subjects. The mean on the ACE for the entire sample was 109.6 with a standard deviation of 20.9. The individual group means, which ranged from 106.0 to 111.2, did not differ significantly. In keeping with the terminology of Miller, et al. (1960), the experimental groups were designated Image, Plan, and

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<sup>1</sup>During the course of the experiment, it was necessary to excuse two subjects from further participation. This left the groups with unequal numbers. Group one and three had sixteen and the other two seventeen subjects.







Plan-Image groups, indicating the treatment which was to be given.

### TREATMENT

The treatment in each group had a special point of reference corresponding to the notions of Images and Plans. The topics or areas for discussion in the three groups were kept parallel as much as possible in order to minimize the effect of content. Various inter- and intra-personal problem situations, which were considered relevant to the majority of the subjects, were discussed. While the subjects were invited to present topics for discussion, it was necessary for the writer to select most of them. These topics centered around various familial, peer, and school problems. A few examples of these problem situations are: you have failed in an important examination; your special project has failed; you are insulted in public; you have quarreled with your parents; and your friends take unfair advantage of you. Each topic was re-worded to meet the requirements of each experimental group. The meaningfulness of the discussion topics was soon made evident since many subjects had or were experiencing the stress at the time of the sessions. This helped to sustain







interest and arouse active participation.

The groups met weekly, except for practise teaching periods, for fifteen weeks during the regular University year. Attendance was regular throughout the treatment sessions. Members were encouraged to talk about the topics under discussion with other members of their own group but were requested not to discuss them with members of the other groups. While the procedure in general was quite directive, an atmosphere of acceptance was encouraged so that everyone would feel free to participate.

### Image Group

The discussion focused on the Image, namely its values, concepts, and beliefs. It was attempted to exclude any consideration of the individual's Plans. The subjects were continually asked to evaluate the stress situation as it would affect them. Each subject was directed to imagine that he was experiencing the stress situation and therefore was to try an evaluation of the experience as it appeared to him. He was then asked to describe or express his own Image with respect to his concept of personal worth, competence, acceptability, and integrity. Once the threatened self was verbalized,







he was directed to change this evaluation of himself. The other members of the group would then suggest different evaluations. An alternative self-image, a miniature self-image to be sure, was hereby offered to the member. The various alternatives were not evaluated according to good or bad, nor to effectiveness or appropriateness in our society. The emphasis was not only on discovering alternatives which might be held under similar circumstances, but also on changing the self-image. Very often, the alternative was a self-image held by someone else. During the discussion, the experimenter helped make the present Image explicit and directed them in its change.

Subjects were also encouraged to think differently about themselves during the other days of the week. They were encouraged to verbalize their Image by recording it in a diary which remained their personal property.

### Plan Group

The focus of attention was the individual's Plans for meeting various life situations. Any direct or indirect consideration of the Image was carefully avoided. The subjects were first asked to make explicit







Plans for meeting the stress situations which paralleled those described above. Secondly, the members were asked to create new Plans for meeting the same situation. No evaluation was placed upon these alternative Plans; they were merely to be different. Then as a group, new Plans for behavior were formulated and spelled out in detail. It was discovered that it was easier to speak in molar rather than in molecular terms. However, some proficiency in breaking the strategies into tactics was achieved.

As in the Image group, the members were asked to record their own typical behavior and were encouraged to plan and try new ways of meeting these situations during the week.

#### Plan-Image Group

A balance between Plan and Image treatment was attempted with this group and it will therefore be referred to as the Plan-Image group. Interference with both the Plan and the Image was attempted at each session. The same stress situations were used as in the other two groups.

#### Control Group

The control group only took the tests which were







administered to the experimental groups and did not meet as a group.

## TESTS

Since the nature of the personality changes which would result from interference with Image and Plan could not be predicted, a variety of personality instruments were chosen. Each instrument will be described at length.

### Rokeach's Dogmatism and Opinionation Scales

According to Rokeach (1960), the organization of the belief systems held by an individual can be described in terms of their openness or closedness.

Openness of belief systems is indicated by an ability to evaluate information independently, resist external pressures, differentiate between information and the source of information, and the ability to maintain a logical relationship between the belief and disbelief systems. In closed mindedness, beliefs and disbeliefs tend to be compartmentalized with little interaction between them. Dogmatism results in isolation of beliefs, alignment with authority, a tendency to be other-directed, and generally threatened by people with







different views. Rokeach (1960) considered that the essential difference between open and closed minded people was the degree with which they relied upon absolute authority for accepting or rejecting beliefs.

The purpose of Rokeach's studies may be said to have been "to develop a way of thinking, to seek out a set of concepts in terms of which it would be possible to describe and to measure the organization of all belief systems, and to describe individual differences in such organization." (p. 389) Two scales were designed to measure openness and closedness of the belief systems.

The Dogmatism Scale attempted to measure the compartmentalization and structure of the various belief systems. The scale consisted of forty items (statements) expressing familiar ideas to which the subjects had already established a certain set. The actual phraseology was designed to transcend any specific ideology so that the formal structure of beliefs might be measured. For example, an agreement with an item such as, "Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups" would indicate the existence of contradictions within the belief system. Agreement with "There are a number of







people I have come to hate because of the things they stand for" would indicate authoritarianism and "In this complicated world of ours, the only way we can know what's going on is to rely on leaders or experts who can be trusted" a dependence upon others for beliefs.

An anxiety scale, using thirty items from the MMPI, was correlated with the Dogmatism Scale. In the seven samples which he tested, the correlations ranged from .36 to .64. Rokeach (1960) reported that "two factor-analysis studies show that dogmatism and anxiety are factorially similar." (p. 364) The same studies showed that the Fascism (F) and Ethnocentrism Scales were only moderately related to dogmatism. Since the Dogmatism Scale was designed to measure authoritarianism or dogmatism in general without regard to political affiliation, this could be expected. The Dogmatism Scale was able to measure the authoritarianism and dogmatism of English Communists which the F and Ethnocentrism Scales had failed to do.

Reliability coefficients are reported for samples from English and American college students, English workers, and veterans in a U. S. V. A. domiciliary. The reliabilities ranged from .68 to .93 and clustered around .80.

The Opinionation Scale was a measure of general







intolerance. The design was based on Rokeach's (1960) assumption that "the more closed our belief systems, the more we will reject others who disagree with us, and the more we will accept others because they agree with us. . . . Opinionated language seems to be the best single indicator of such intolerance." (p. 80)

Because the more closed minded find it harder to distinguish between information and the source of information, the forty items combine a statement of fact and a conditional acceptance of others. Subjects scoring high on this scale tended to reject those who disagreed and accepted those who agreed with their belief system. The scale also measured two kind of opinionation, rejection, and acceptance. One might reject the statement (belief) and the holder of that belief, or one might accept the statement and the holder of that belief. Opinionation or intolerance was expressed by either attitude. Two opposing political orientations were also covered in order to obtain a fair measure of all subjects. This was an attempt to keep the scale as free as possible of ideological content. There was not only a balance between left and right bias but also a wide sampling of items. "Only a simple-minded fool would think that Senator McCarthy

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is a defender of American democracy" and "It is foolish to think that the Labour Party is really the party of the common man" are examples of left and right opinionated rejection.

Rokeach (1960) presented two final versions, C and CE, for American and English populations, respectively. With the author's permission, some items were revised to insure meaningfulness to Canadian subjects. The changes ranged from substitution of a single word to a complete revision of the statement. The nature of the changes can be seen by comparing the following parallel item from the Canadian and American scales. The following item, "Anyone who knows what's going on will tell you that those who favor communism are traitors to their country" was substituted for "Anyone who knows what's going on will tell you that Alger Hiss was a traitor who betrayed his country." While the actual content was changed, the direction and general structure remained the same.

Three scores of right opinionation, left opinionation, and total opinionation are obtainable.

Rokeach administered the Opinionation Scale to Two English samples of university students who subscribed to political views ranging from conservative to communism. The scores on left opinionation ranged from







a low for the conservatives to high for the communists, while the exact reverse was true for right opinionation. The scores of Liberals, Attleeites, and Bevanites were distributed between the two extremes. In contrast to the F (Fascist) Scale studies, the communists had the highest mean score for total opinionation. In another study by Rokeach (1960) the Catholics scored high on right opinionation, total opinionation, dogmatism, and the F Scale.

In his summary of these findings, Rokeach (1960) evaluated the Dogmatism and Opinionation Scales as follows:

Even though the rightest and leftist groups score at opposite poles on F and Ethnocentrism, they both generally score high on dogmatism and opinionation. And although the English Conservatives and Communists are also at opposite poles on F and Ethnocentrism, no relation is apparent between radicalism-conservatism on the one hand and dogmatism and opinionation on the other.

These findings provide the strongest evidence we have been able to obtain thus far indicating that the Dogmatism and Opinionation Scales are measuring something relatively independent of ideological content. We infer this "something" to be general authoritarianism and general intolerance. (pp. 117, 118)

In a typical college sample, the reliability of the American Opinionation Scale was .76. Subscale reliabilities for the same sample were .68 and .77 for left and right opinionation, respectively. The English







version had a full scale reliability of .75 while the subscales reliabilities were .89 and .88 for Left and Right Opinionation, respectively. The reliability for English workers was the same as the college sample for the full scale but .91 for both subscales. Rokeach (1960) considered the high reliabilities of the subscales of special interest since they are only half as long as the full scale.

#### Edwards' Social Desirability Scale

Edwards (1957) states that the probability of endorsing an item on a personality inventory is positive and highly correlated with the social desirability of the item, that is, people tend to respond in socially acceptable ways. In discussing this tendency, he says:

I believe that there is sufficient evidence to indicate that the tendency to give socially desirable responses in self-description is a fairly stable personality characteristic. Thus a subject who shows this tendency to a high degree on one personality inventory will also show it to a marked degree in his responses to items in other personality inventories. Similarly, a subject who shows the tendency to a lesser degree on one inventory will also show it to a lesser degree on other inventories. (Edwards, 1957, p. 39)

In order to obtain items for his scale he submitted 150 items from the MMPI to ten judges who were asked to give a socially desirable response to each item. The 79 items, for which there was perfect agreement, were used in his



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1955-1956

1957-1958

1959-1960

1961-1962

1963-1964

1965-1966

1967-1968

1969-1970

1971-1972

1973-1974

1975-1976

1977-1978

1979-1980

1981-1982

1983-1984

1985-1986

1987-1988

1989-1990



first SD Scale. The scale was scored in terms of agreement with the rated social desirability of the items. The scale was then administered to 100 college students. After analyzing their responses, the 39 items which differentiated best between the high and low scorers on the SD Scale were retained.

Similar to the findings of Wordyoe, Merrill, and Heathers, and Edwards (Edwards, 1957), Crowne and Marlowe (1960) report high positive correlations between Edwards' SD Scale and the M Scale and Ego Strength Scale. High negative correlations are reported between the SD Scale and the clinical scales of the MMPI. Edwards' SD Scale was also negatively correlated with the Anxiety scales of Taylor and Welsh. Crowne and Marlowe also report a correlation of .35 between their Social Desirability Scale and Edwards' Social Desirability Scale. This was significant at the .01 level.

A split half reliability of .83 was obtained from a sample of 192 cases.

#### Schaefer's Test of Behavioral Rigidity

The Test of Behavioral Rigidity (TBR) was designed to measure the ability of the individual to adjust to the stresses imposed upon him by a changing environment.







A high score on the test indicated the ability to cope with the restraints which bound a person's life space. (Schaie, 1955, 1960) The present edition of the TER is still considered to be in the research stage.

According to Schaie (1955), rigidity is "a tendency to persevere and resist conceptual change, to resist the acquisition of new patterns of behavior, and to refuse to relinquish old established patterns. (p. 608) The test consisted of two separate tests and a questionnaire, yielding seven separate scores. The questionnaire consisted of the twenty-two items of the California Psychological Inventory (CPI) R Scale and nine items from Landis P Scale. The R and P Scale items were masked by forty-four items from the CPI Social Responsibility Scale.

Factor analyses of these seven scores yielded three factors described by Schaie (1960) as follows:

The "Motor-cognitive rigidity" score indicates the individual's ability to shift without difficulty from one activity to another. It is a measure of effective adjustment to shifts in familiar patterns and to continuously changing situational demands. . . . (It) may be a measure of efficiency in dealing with symbolic or semantic types of restraints.

The "Personality-Perceptual rigidity" score seeks to indicate the individual's ability to adjust readily to new surroundings and change in cognitive and environmental patterns. It seems to be a measure of the ability to perceive and adjust to new and unfamiliar







patterns and interpersonal situations (or) . . . efficiency in dealing with . . . interpersonal restraints.

The "Psychomotor-speed" score indicates the individual's rate of emission of familiar cognitive responses. A high score would seem to imply superior functional efficiency in coping with familiar situations requiring rapid responses and quick thinking.

The Composite score (an average of the above three) may be interpreted as a general estimate of the individual's flexibility. (pp. 9, 10)

There was relatively little overlap in the factor loadings and only minimal relation between the factors. Konietzko (Schaie 1960) reported a maximum correlation of .22 between Motor-cognitive rigidity and Psychomotor-speed factors.

### Butler-Haigh Q-Sort<sup>2</sup>

Butler and Haigh (1954), following Stephenson's methodology, developed a Q-Sort composed of one hundred self referent phrases randomly drawn from therapy protocols. (1954, p. 57) If necessary, these phrases were re-worded by the authors for clarity. The equal proportion of positive and negative (self derogatory) statements made it possible to describe both the self and the not-self. The nature of these items can be illustrated by the following statements: "I feel emotionally nature;" "I feel adequate;" "I am a failure;" and "I live largely by other people's values and standards."

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<sup>2</sup>The writer is indebted to Dr. James Butler who provided the 100 items and some suggestions for administering the Q-Sort.







The Q-Sort was administered under two different conditions, several days apart. The first time, the subjects were instructed to describe themselves (self-concept) and the second time to describe how they would like to be (ideal self). The one hundred items were to be sorted into a continuum of nine piles, ranging from "least like me" to "most like me." Piles 1-4 were the "least like me" piles and the 6-9 piles being the "most like me" ones. Pile one and nine were to be considered the extremes of the continuum. In order to obtain a distribution approaching normality, a definite number of items were assigned to each pile.

From the two sorts, the self acceptance and adjustment scores were obtainable. The adjustment score could be further broken down into two scores for each of the sortings.

The Self-Acceptance score was obtained by computing a rank order correlation<sup>3</sup> between the self and ideal sorts. A high correlation indicated little discrepancy between the self concept and the ideal and

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<sup>3</sup>Since the data contained many tied ranks, the following correlation formula was used:

$$r = 1 - \frac{d^2}{2Ns^2} \quad (\text{Munnally, 1959, p. 443})$$

This  $r$  is comparable to the product moment, having limits of  $\pm 1$ .







therefore greater self acceptance or greater self esteem. A low correlation revealed a discrepancy between the self and the ideal and therefore less self acceptance. The authors suggested that therapy would have a greater effect on the self concepts than upon ideal concepts.

The Adjustment Score was obtained by scoring the Ideal and Self sorts separately. Dymond (1954) with the help of six judges, analyzed the one hundred items and determined that twenty-six items were irrelevant in describing the adjusted person. The remaining seventy-four items were judged to be either "not descriptive" or "descriptive" of the adjusted person. The Adjustment score could be obtained for both the Ideal and Self sorts by adding the number of items which were sorted consistently with the sort of the hypothetically adjusted person. For example, if an item was judged to be descriptive of the adjusted person, it had to be placed on the "like me" end of the continuum in order to be counted.

In order to obtain a point of reference for therapeutic procedures, Butler and Haigh (1954) administered the Q-Sort to a group seeking therapy and to an equivalent control group who did not seek therapy. The results of the two groups were then compared. The average







correlation between the Ideal and Self sorts for those not seeking therapy was .58 while for those seeking therapy, it was only .01.

Friedman (1955) reports a median correlation of .63 for adjusted people, .43 for psychotics, and .03 for neurotics. The general conclusion was that the individual who felt no need for therapy was higher in self-acceptance.

There was also a high consistency between the rank order correlation of Self and Ideal sorts and the Adjustment score. Dymond (1954) reported that for twenty-three cases in a control group, the rank order correlation between the Self-Acceptance and Adjustments scores were .83 and .92 before and after therapy, respectively.

Rudikoff (1954) reported test-retest reliabilities for the Ideal and Self sorts at various stages of therapy. However, since therapy was expected to change the Ideal and Self concepts, only the prewait-pretherapy correlations could be accepted as reliability coefficients. The usual time between the two tests was sixty days. For eight cases reported, the mean correlations for the Ideal and Self sorts were .82 and .67, respectively. Dymond (1954) reported a reliability of .86 for the







Adjustment score over a six month period.

American Council on Educational Psychological Examination<sup>4</sup>

The ACE is widely used by college and universities for student admission, placement, and guidance. It was designed to be a general measure of scholastic aptitude, yielding language, quantitative, and total scores.

Michael (1959) observed that compared to the SCAT and CQT, the ACE was a less specific measure of high school learning experiences. It is unfortunate that the test publishers have not published any recent reliability and validity data. Anastasi (1954) reported an odd-even reliability coefficient of .95 for the 1938 edition and correlations ranging from .58 to .67 between the ACE and the Stanford-Binet. Berdie, Dressel, and Kelso (Fowler, 1959) reported correlations between grade point averages and ACE scores ranging from .25 to .66, while Cronbach (1960) stated that its predictive validity was about .45.

### TESTING

All the test, with the exception of the ACE, were administered to the subjects prior to treatment and after treatment was completed.

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<sup>4</sup>The ACE scores were made available by Dr. A. J. Cook, Director, Student Counselling Services, University of Alberta.







## CHAPTER V

### ANALYSIS OF DATA AND RESULTS

#### STATISTICAL PROCEDURES

The differences between pre-treatment and post-treatment scores for each individual were obtained for all the variables and a t test of the differences was computed for each group to discover if any changes within the groups had occurred. Analysis of Variance of the Differences were also calculated to discover differences between the groups.<sup>1</sup> The Hartley F test for k samples was made to test the homogeneity of the variances. (Walker and Lev, 1953)

A rank order correlation was used to correlate the Self and Ideal Q-Sorts. The rank order correlation between the Q-Sorts were transformed to Fisher's z's for further treatment. The Pearson Product Moment correlation was also calculated to discover the relationships between the various tests used.

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<sup>1</sup>The writer wishes to acknowledge his indebtedness to Dr. J. R. McGregor of the University of Alberta Mathematics Department for advice regarding the analysis of variance of the differences.







## RESULTS

### Relationship Between the Instruments

The pre-treatment data of all the instruments for all sixty-six subjects were intercorrelated using the Product Moment correlation. The intercorrelation matrix is given in Table I, page 77.

It can be noted that none of the tests, except the TBR Psychomotor-Speed factor and Composite Score correlated significantly with the ACE test. This relationship was probably due to the speed element which was common to both the ACE and the TBR Psychomotor-Speed factor.

The Right and Left Opinionation subscales correlated highly with the total scale but did not correlate with each other. This finding is similar to that reported by Rokeach (1960) for the Michigan samples but in contrast to those found in New York and English college samples.

The correlation of .48 between Dogmatism and Opinionation Scales was also similar to that reported by Rokeach. (1960) The Midwest, Eastern, and English studies yielded correlations of .34 and .63 between Opinionation and Dogmatism Scales. The significant







TABLE I

## CORRELATION MATRIX OF THIRTEEN VARIABLES

	DOG	O:T	O:L	O:R	SDS	M C	P P	P S	COM	IDL	SELF	ACE
(Decimal point is omitted)												
DOGMATISM												
OPINION T	48											
OPINION L	27	73										
OPINION R	46	67	05									
WORDS SDS	-33	-02	06	-10								
TBR MC	17	10	08	07	-20							
TBR PP	-45	-46	-31	-34	26	-09						
TBR PS	-18	-14	-01	-21	12	-07	13					
TBR COMP	-23	-26	-14	-25	05	65	60	40				
ADJ IDEAL	-05	20	33	-07	09	02	06	02	07			
ADJ SELF	-11	16	25	-04	69	-12	09	-04	-04	31		
ACE	01	-20	-10	-17	13	09	17	39	32	06	09	
SELF ACC	-00	16	23	-02	59	-06	05	01	-51	20	61	00

\*Significant at the .01 level.







negative correlation between the TBR Personality-Perceptual factor and the Rokeach scales was to be expected since rigidity and dogmatism are related. For purposes of interpretation, this relationship should be considered positive since the tests are scored in opposite directions. Flexibility on the TBR is indicated by a high score whereas on the Rokeach scales, a high score indicated either dogmatism or opinionation.

The correlation of  $-.33$  between the Dogmatism and Social Desirability Scales was just significant at the  $.01$  level. This relationship can perhaps best be understood in a comparison of the relationship between the Social Desirability Scale with the Self Adjustment and Ideal Adjustment measures. The SDS correlated  $.09$  and  $.69$  with the Ideal and Self Adjustment scores, respectively, and  $.59$  with Self Acceptance. It is difficult to account for this large difference in the correlation of the SDS with the two Adjustment scores. The negative correlation with Dogmatism and positive relationship with the self scales may indicate that the SDS measures something more than just social desirability. Bendig (1960) concluded that the SDS is to some extent a measure of emotionality. The seventeen items of the SDS which were not included in the Taylor Manifest Anxiety







Scale had a negative loading on the Emotionality (Em) factor and a lesser positive loading on the Falsification (F) factor. He further stated that "the factor loadings . . . indicate that the SDS scores are better measures of Factor Em than they are of F." (Bendig, 1960, p. 164)

Exploring the self concept further, the discrepancy between the Ideal and Self Adjustment scores correlated  $-.36$  with Edwards' Social Desirability Scale. Those that scored higher on the SDS tended to have a smaller discrepancy between the Self and Ideal, indicating greater self satisfaction.

Self Acceptance correlated  $.26$  and  $.88$  with Ideal and Self Adjustment, respectively. This is a further indication of the difference between the Ideal and Self concepts.

These findings indicate that the title of Edwards' scale is misleading. If the SDS can be called a measure of emotionality or anxiety, it would be expected that Dogmatism and SDS would correlate negatively and that there would be a high relationship between it and the various self measures described above.

The TBR factors did not intercorrelate significantly which was similar to Schaie's (1959) findings.







The Motor-Cognitive Rigidity factor was not significantly correlated with any other scale. The Psychomotor-Speed factor correlated only with the ACE which has already been discussed. The Personality-Perceptual factor correlated significantly with the Rokeach and SD Scales but not with any of the others.

Since only in a few cases the intercorrelations were exceptionally high, it can be generally concluded that there was a wide sampling of personality variables.

#### Changes Within Groups

Using the difference method, the mean differences between pre- and post-treatment scores for each group were calculated. The mean differences, standard deviations of the differences, and the *t*'s for twelve variables are given in Table II, page 81.

For 15 degrees of freedom, the *t* had to be 2.13 and 2.95 to be significant at the .05 and .01 levels. No significant changes for any of the groups were found on the Dogmatism, Left Opinionation, Edwards' Social Desirability, Motor-Cognitive Rigidity, and Ideal Adjustment Scales. Only the Plan group changed on both Total and Right Opinionation. All the groups showed a considerable decline in Right Opinionation with the Plan







TABLE II

CHANGES IN MEANS, STANDARD DEVIATIONS OF DIFFERENCES AND t's FOR FOUR GROUPS ON TWELVE VARIABLES

Variable	Image n = 16			Plan n = 17			Plan-Image n = 16			Control n = 17		
	$\bar{d}$	s	t	$\bar{d}$	s	t	$\bar{d}$	s	t	$\bar{d}$	s	t
DOGMATISM	-8.25	18.0	1.83	-11.90	20.8	.37	-3.80	23.1	.66	-4.60	14.6	1.30
OPINION T	-3.68	18.1	.82	-8.70	16.2	2.21*	-5.31	14.2	1.50	1.65	22.8	.30
OPINION L	1.20	13.0	.37	-2.20	12.2	.89	-2.10	5.9	1.42	5.40	15.1	1.46
OPINION R	-4.80	13.1	1.46	-6.50	9.6	2.79*	-3.10	10.3	1.20	-3.50	14.5	1.00
EDWDS SDS	.63	3.9	.66	-.82	2.6	1.30	-.56	4.0	.57	-.24	3.4	.29
TBR MC	1.30	6.6	.78	2.10	7.0	1.23	4.75	10.7	1.77	4.00	8.3	1.99
TBR PP	-1.60	5.7	1.12	.50	6.0	.35	-2.10	3.6	2.35*	-.20	7.7	.11
TBR PS	6.80	4.5	6.02***	5.90	4.4	5.51***	7.40	3.9	7.63***	3.94	5.1	3.18**
TBR COMP	2.10	3.1	2.73*	2.50	3.9	2.60*	3.30**	4.5	2.95**	2.70	4.8	2.33*
ADJ IDEAL	.00	3.7	.00	.24	4.2	.24	1.75	5.3	1.34	.65	2.7	1.00
ADJ SELF	2.50	5.9	1.70	4.20	7.4	2.35*	4.20	7.7	2.18*	1.40	6.5	.89
ACCEPTANCE	9.63	15.8	2.44*	20.41	22.3	3.79**	17.31	18.7	3.70**	4.76	14.8	1.33

\* sig @ .05

\*\* sig @ .01

\*\*\* sig @ .001



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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

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group change approaching significance at the .01 level.

Performance of all groups changed on the TBR Composite score. The Image-Plan Group mean difference was significant at the .01 level and the other three at the .05 level. On the Psychomotor-Speed factor, the mean differences were significant well beyond the .001 level for all three experimental groups but only at the .01 level for the control.

On the Personality-Perceptual Rigidity factor, the Plan-Image group changed in the direction of greater rigidity. However, it should be noted that the variance of this group was significantly less than the other three. The means of the Plan and control groups remained relatively stable while the Image group also tended toward greater rigidity. However, the unequal variances makes the results somewhat ambiguous and further comparisons hazardous.

Significant changes in self acceptance were found in the three therapy groups. The Plan and Plan-Image mean differences were significant well beyond the .01 level while the Image mean difference was significant at the .05 level. The subjects in the Plan and Plan-Image groups showed much more self acceptance after treatment than before.







The significant increase in the correlations between the Ideal and Self Q-Sorts which indicated greater self acceptance, could not be attributed to a lowering of the ideal concept. There was a slight insignificant increase in the mean of the adjustment score for three groups while one remained the same. The variances of the Ideal Adjustment scores were significantly smaller than the variance of the Self Adjustment scores for all four groups. The Self Adjustment means increased for all four groups but only the Plan and the Plan-Image groups changed significantly. While all groups changed toward better adjustment, the order followed the same pattern as that established on the Self Acceptance scores, the Plan group changing the most and the Control the least.

#### Differences Between Groups

The analysis of variance of the differences was also calculated for each of the scales. The degrees of freedom, variances between and within, and the F ratio are given in Table III, page 94.

Martley's F test for homogeneity of variance showed that the Plan-Image variances on the Left Opinionation scale and Personality-Perceptual Rigidity







TABLE III

ANALYSIS OF VARIANCE OF THE DIFFERENCES BETWEEN  
PRE- AND POST-TREATMENT SCORES FOR TWELVE  
VARIABLES GIVING VARIANCES BETWEEN AND  
WITHIN, STANDARD DEVIATIONS,  
F, AND SIGNIFICANCE

	Variance Between	Variance Within	SD	F	Sig
df	3	62			
DOGMATISM	114	372	19.3	.31	ns
OPINIONATION T	316	327	18.1	.97	ns
OPINIONATION L	214	146	12.1	1.47	ns
OPINIONATION R	73	144	12.0	.50	ns
EDWARDS' SDS	6.5	12.2	3.5	.53	ns
TBR MOTOR-COG	42	68	8.3	.62	ns
TBR PSCHO-SP	39	18	4.2	2.20	ns
TBR PERS-PERC	6	36	6.0	.17	ns
TBR COMPOSITE	4	17	4.1	.23	ns
ADJUST IDEAL	3.6	10	3.2	.36	ns
ADJUST SELF	31	47	6.9	.66	ns
SELF ACCEPTANCE	856	315	17.8	2.72	*

\*Approaching the significance level of 2.76







factor were significantly less than that for the other groups. On all other scales, the variances of the differences were quite similar.

Except for the Psychomotor-Speed factor and the Self Acceptance scores, the F ratios were less than 2.00 and far from significance. The F of 2.72 for the Self Acceptance measure was just short of the 2.76 needed for significance. However, since the F was so near significance at the .05 level, and the differences between means quite large, the F was treated as if significant.

A difference of 12.36 between means was significant at the .05 level. Both the Plan and Plan-Image means differed from the control mean. The difference between the Plan and Image means approached significance at the .05.

#### DISCUSSION

Since the groups differed significantly only on one of the twelve measures, the general hypothesis that differential treatment would result in measurable differential results was not supported. Although the analysis of variance did not support the hypothesis, an examination of the various within-group changes







indicated a particular trend. The Plan group changed significantly on six scales, the Plan-Image on five, the Image on three and the control on two. However, it should be noted that all four groups changed on two scales, namely, the TBR Psychomotor-Speed factor and Composite score. In both cases, the control means changed the least. Any changes in the Image group were duplicated by both the Plan and the Plan-Image groups at either the same or even higher significance level.

One finding with special relevance to the Image-Plan paradigm is the change in Means of the Plan and Image groups on the Dogmatism and Opinionation Scales. These changes are quite consistent with the theory.

Since beliefs are part of the Image, the Dogmatism Scale should be sensitive to changes in the Image. If the treatment was effective, the Image group would be expected to change the most. The mean difference of -8.25 was significant at the .10 level but not at the .05. The mean difference of the Plan group was not significant.

The Plan mean difference of -6.70 on the Opinionation Scale was significant at the .05 level. The mean difference of the Image group was not significant.







This finding would suggest that the Opinionation Scale was more related to Plans. If intolerance is measured by the degree to which people are accepted or rejected because of their beliefs, the Opinionation Scale might be a measure not only of intolerance but also of the availability of Plans to meet people with different beliefs. However, since the differences between groups were not significant, the results only suggest an interesting possibility which should be investigated further.

One of the variables not controlled in the experiment was the effects of group membership. It has been discussed in various places (Ellis, 1955, Eysenck, 1959, Wolberg, 1954) that changes may occur spontaneously. The changes may be due to a number of causes completely unrelated to therapy. Since the groups differed only on one measure, it might be possible to conclude that interference with the Image and Plan had not occurred. However, while group membership was an uncontrolled variable which must be considered, its effects may have been mitigated by membership in a lecture group which had their own class organization. It is possible, therefore, that in this case, the group membership factor was of lesser importance.







## CHAPTER VI

### SUMMARY AND CONCLUSIONS

#### SUMMARY

The purpose of this study was to determine the usefulness of the concepts of Image and Plans as applied to counseling. The three experimental and one control groups were drawn from two introductory classes in Educational Psychology. The experimental groups were called the Image, Plan, and Plan-Image groups, designating the focus of attention in each group. The treatment consisted of interference with the Image and Plans during fifteen group sessions. Even though the procedure was quite directive, an attitude of acceptance was maintained. The findings may be summarized as follows:

1. The low intercorrelations of the pretreatment scores indicated that the tests measured a variety of personality variables.

2. By an analysis of variance of the differences, it was found that the groups differed only on the Self-Acceptance score. The Plan and Plan-Image groups differed from the control.







3. None of the within-group differences were significant on Dogmatism, Left Opinionation, TBR Motor-Cognitive Rigidity Factor, Edwards' Social Desirability Scale and Ideal Adjustment.

4. All four groups changed significantly on the TBR Psychomotor-Speed Factor and Composite Score. The Plan-Image group changed the most on both measures and the control the least.

5. On the Self-Acceptance Scale, the Plan and Plan-Image groups changed significantly at the .01 level and the Image group at the .05.

6. Both the Plan and the Plan-Image groups changed significantly on the Self-Adjustment Scale.

7. The Plan group changed significantly on Total and Right Opinionation.

8. The Plan-Image group changed toward greater rigidity on the TBR Personality-Perceptual Rigidity Factor.

### CONCLUSIONS

Since the analysis of variance indicated a significant difference on only one of the twelve measures, no comprehensive conclusions may be drawn. The within-group changes, however, may suggest an







interesting trend which should be further investigated. The within-group changes seem to suggest that:

1. The concepts of Plan and Image have some validity as they can be interfered with separately.
2. Interference with Plans produces different changes than interference with the Image.
3. An increase in self acceptance is associated with better adjustment.

However, while the Plan group changed on more variables than the others, it cannot be assumed that this is necessarily a superior method.

#### IMPLICATIONS FOR FURTHER STUDY

1. The differential changes by the Plan and Image groups on the Dogmatism and Opinionation Scales needs further study. This investigation would seek to determine the degree to which the Opinionation Scale is a measure of Plans rather than beliefs.

2. Since the subjects of the experiment were drawn from a normal population, and were not seeking counseling, it might be profitable to utilize the concepts of Image and Plans in a clinical setting.

While the hypothesis was not supported, a definite trend seemed to be established which would lend credence to the notions of Image and Plans.







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## A P P E N D I X      A







## OPINIONATION SCALE

## Canadian Version

1. It's just plain stupid to say that it was Mackenzie King<sup>1</sup> who got us into the war.
2. A person must be pretty stupid if he still believes in differences between the races.
3. There are two kinds of people who fought Premier Douglas's socialization program: the selfish and the stupid.
4. A person must be pretty shortsighted if he thinks that the conservatives represent the best interests of the Canadian people.
5. It's the people who believe everything they read in the papers who are convinced that Russia is pursuing a ruthless policy of imperialist aggression.
6. It's mainly those who believe the propaganda put out by the real-estate interests who are against federal slum clearance program.
7. A person must be pretty gullible if he really believes that the Communists have actually infiltrated into government and education.

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<sup>1</sup>Taken from English Version.

<sup>1</sup>Italics indicate the portion altered.







8. It's mostly those who are itching for a fight who want peace time conscription.

9. It is very foolish to advocate government support of religion.

10. Only a simple-minded fool would think that Senator McCarthy was a defender of American democracy.

11. It's perfectly clear that the decision to execute the Rosenbergs has done the United States more harm than good.

12. Any person with even a brain in his head knows that it would be dangerous to let the United States be run by men like General MacArthur.

13. The truth of the matter is this! It is big business which wants to continue the cold war.

14. Make no mistake about it! The best way to achieve security is for the government to guarantee jobs for all.

15. It's perfectly clear to all decent people that all this fuss about communism does more harm than good.

16. Thoughtful persons know that the Conservatives are not really interested in democracy.

17. It's perfectly clear to all thinking persons that the way to solve our financial problem is by soak-the-rich program.

18. It's all too true that the rich are getting richer and the poor are getting poorer.







19. History clearly shows that it is the private enterprise system which is at the root of depression and wars.

20. Anyone who's old enough to remember the depression of the thirties will tell you that it's a lucky thing Prime Minister Bennett was never re-elected.

21. It's simply incredible that anyone should believe that socialized medicine will actually help solve our health problems.

22. A person must be pretty ignorant if he thinks that Diefenbaker is going to let "big business" run this country.

23. It's the fellow travellers or Communists who keep yelling all the time about Civil Rights.

24. It's the radicals and labor racketeers who yell the loudest about labor's right to strike.

25. It is foolish to think that the C.C.F. Party is really the party of the common man.

26. You just can't help but feel sorry for the person who believes that the world could exist without a Creator.

27. It's usually the trouble-makers who talk about government ownership of public utilities.

\*28. Only a misguided idealist would believe that the Soviet Union is for peace.







29. It's mostly the noisy radicals who try to tell us that we will be better off under socialism.

30. It's the agitators and left-wingers who are trying to get Red China into the United Nations.

31. Any intelligent person can plainly see that the real reason Canada is spending so much for defense is to stop aggression.

32. Plain common sense tells you that prejudice can be removed by education, not legislation.

33. Anyone who is really for democracy knows very well that the only way for Canada to head off revolution and civil war in backward countries is to support the United States foreign policy.

34. History will clearly show that Diefenbaker's victory over the Liberal Party in 1957 was a step forward for the Canadian people.

35. The American rearmament program is clear and positive proof that they are willing to sacrifice to preserve their freedom.

36. This much is certain! The only way to defeat tyranny in China is to support Chiang Kai-Shek.

37. It's already crystal-clear that the United Nations is a failure.







38. A study of Canadian history clearly shows that it is the Canadian businessman who has contributed most to our society.

39. Even a person of average intelligence knows that to defend ourselves against aggression we should welcome all help--including Franco Spain.

40. Anyone who knows what's going on will tell you that those who favor communism are traitors to their country.















## OPINIONATION SCALE

## American Version

1. It's just plain stupid to say that it was Franklin Roosevelt who got us into the war.
2. A person must be pretty stupid if he still believes in differences between the races.
3. There are two kinds of people who fought Truman's Fair Deal program: the selfish and the stupid.
4. A person must be pretty short-sighted if he believes that college professors should be forced to take special loyalty oaths.
5. It's the people who believe everything they read in the papers who are convinced that Russia is pursuing a ruthless policy of imperialist aggression.
6. It's mainly those who believe the propaganda put out by the real-estate interests who are against a federal slum clearance program.
7. A person must be pretty gullible if he really believes that the Communists have actually infiltrated into government and education.
8. It's mostly those who are itching for a fight who want a universal military training law.
9. It is very foolish to advocate government support of religion.



THE  
HISTORY OF THE  
CITY OF BOSTON

FROM THE FIRST SETTLEMENT  
TO THE PRESENT TIME  
BY  
JOSEPH NEALE  
OF THE BOSTON BAR  
IN TWO VOLUMES  
VOL. I.  
BOSTON: PUBLISHED BY  
J. B. ALLEN, 1825.

The first settlement of the city of Boston was made by a small party of Englishmen, who, in the year 1630, sailed from England, and landed on the island of Nodd, now called North Island, in the harbor of Boston. They were accompanied by their families, and by a number of Indian converts, who had been taught the Christian religion by the missionaries of the Massachusetts Company. The settlement was at first very small, and the inhabitants were engaged in various occupations, such as fishing, hunting, and agriculture. They also traded with the Indians, and obtained from them various articles of Indian goods, such as furs, skins, and beads. The settlement gradually increased in size, and by the year 1634, it had become a permanent one. The inhabitants were then known as the "Bostonians," and they continued to grow in number and in wealth until the year 1692, when the city was destroyed by a great fire. The city was then rebuilt, and it has since become one of the most important and prosperous cities in the United States.



10. Only a simple-minded fool would think that Senator McCarthy is a defender of American Democracy.

11. It's perfectly clear that the decision to execute the Rosenbergs has done us more harm than good.

12. Any person with even a brain in his head knows that it would be dangerous to let our country be run by men like General MacArthur.

13. The truth of the matter is this! It is big business which wants to continue the cold war.

14. Make no mistake about it! The best way to achieve security is for the government to guarantee jobs for all.

15. It's perfectly clear to all decent Americans that Congressional Committees which investigate communism do more harm than good.

16. Thoughtful persons know that the American Legion is not really interested in democracy.

17. It's perfectly clear to all thinking persons that the way to solve our financial problem is by a soak-the-rich tax program.

18. It's all too true that the rich are getting richer and the poor are getting poorer.







19. History clearly shows that it is the private enterprise system which is at the root of depressions and wars.

20. Anyone who's old enough to remember the Hoover days will tell you that it's a lucky thing Hoover was never re-elected.

21. It's simply incredible that anyone should believe that socialized medicine will actually help solve our health problems.

22. A person must be pretty ignorant if he thinks that Eisenhower is going to let the "big boys" run this country.

23. It's the fellow travellers or Reds who keep yelling all the time about Civil Rights.

24. It's the radicals and labor racketeers who yell the loudest about labor's right to strike.

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the United States is an imperialist warmonger.

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30. It's the agitators and left-wingers who are trying to get Red China into the United Nations.

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33. Anyone who is really for democracy knows very well that the only way for America to head off revolution and civil war in backward countries is to send military aid.

34. History will clearly show that Churchill's victory over the Labour Party in 1951 was a step forward for the British people.

35. The American rearmament program is clear and positive proof that we are willing to sacrifice to preserve our freedom.

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37. It's already crystal-clear that the United Nations is a failure.







38. A study of American history clearly shows that it is the American businessman who has contributed most to our society.

39. Even a person of average intelligence knows that to defend ourselves against aggression we should welcome all help--including Franco Spain.

40. Anyone who knows what's going on will tell you that Alger Hiss was a traitor who betrayed his country.



























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